PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
HL-01419.001		

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP 03/12351	05.11.2003	05.11.2002

International Patent Classification (IPC) or both national classification and IPC
G06F9/44

Applicant
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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of   sheets.

3. This report contains indications relating to the following items:

I	☒	Basis of the opinion
II	☐	Priority
III	☐	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	☐	Lack of unity of invention
V	☒	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	☐	Certain documents cited
VII	☐	Certain defects in the international application
VIII	☐	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
04.06.2004	17.02.2005

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.   PCT/EP 03/12351

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):*

Description, Pages

1-19   as originally filed

Claims, Numbers

1-6   as originally filed

Drawings, Sheets

1-4   as originally filed

2. With regard to the **language,** all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description,   pages:

   ☐ the claims,   Nos.:

   ☐ the drawings,   sheets:

5. ☐   This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-6
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-6
Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

2. Citations and explanations

   see separate sheet

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Re Item V
Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1   Documents

The following document is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1   SHAH A ET AL: "Symphony: a Java-based composition and manipulation framework for distributed legacy resources", Software Engineering For Parallel And Distributed Systems, 1999. Proceedings. International Symposium On Los Angeles, CA, USA 17-18 May 1999, Los Alamitos, CA, USA, IEEE Comput. Soc, US (17-05-1999), pages 1-11, XP010343691.

D2   LORENZ D H ET AL: "Design-time assembly of runtime containment components", Technology Of Object-oriented Languages And Systems, 2000. Tools 34. Proceedings. 34th International Conference On Santa Barbara, CA, USA 30 July-4 Aug. 2000, Los Alamitos, CA, USA, IEEE Comput. Soc, US (30-07-2000), pages 195-204, XP010511350.

2   Inventiveness of claim 1

2.1   The document D1 is regarded as being the **closest prior art** to the subject-matter of the claim, and **discloses** (the references in parentheses applying to this document):

an application framework under which product applications are configured and manipulated, comprising:

(a)   application objects providing respective basic information processing functions for use in a product application (page 1, left column, section 1 "Introduction", line 3: "composable client components that represent resources such as data, programs and tools"), each application object containing its processing function within a standard interface with the inputs and outputs of which the processing function communicates with regard to the connections of those inputs and

outputs (line 6: "The client components are implemented as·Java beans", especially the standardized Java Bean event interface which is used for the connections between the beans in a so-called "meta-program"),

(b)   an architectural structure in which:

data dependencies between application objects are established by means of connections between standard interface inputs and outputs of application objects (page 1, right column, paragraph 2, line 10: "A meta-program is a set of linked program and data components implemented as a data-flow graph"; and page 6, right column, paragraph 2, line 8: "In order to connect two Symphony beans, the connection event from a data source bean must be connected to the eventSend method of a data sink bean. ... a connection between two Symphony beans is always made in the direction of the data flow."),

whereby the hierarchy can be modified at run-time, and data dependency connections can be set up and/or deleted at run-time (page 6, left column, paragraph 2, line 1: "Every bean publishes certain properties which can be discovered by the BeanBox at run-time and customized by the user." which relates to the well-known capability of SUN's BeanBox of permitting the user to change a bean during run-time in the so-called "design mode"; see D2 for further information about the BeanBox, especially page 199).

2.2   Thus, the **difference** between D1 and the subject-matter of the claim is that application objects are organized into a hierarchy.

2.3   The **problem** to be solved by the present invention may therefore be regarded as easing the development and maintenance of the complete program (called "product application").

2.4   The **solution** proposed cannot be considered as involving an inventive step since using hierarchies is the standard way of structuring big programs composed of subprograms (called "application objects"). Such hierarchies for the framework of D1 (Java Beans) can be found in D2 (page 195, paragraph 3, line 3: "... three different

logical hierarchies: a collection hierarchy, a visual hierarchy , and the new context hierarchy").

2.5   Therefore, the subject-matter of this claim is **not inventive** in the sense of Article 33(3) PCT.

3   Inventiveness of independent claims 3, 4

Since method claim 3 and program claim 4 contain only features which correspond to features of claim 1, the objections concerning lack of inventive step of claim 1 **apply accordingly** to these claims.

4   Inventiveness of dependent claims 2, 5, 6

The dependent claims do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to inventive step, the reasons being as follows:

- claim 2: the additional feature of distributing computing for the application objects is also disclosed in D1 (page 1, left column, line 5: "provides a client/server framework for transparently executing the composed application"; and figure 2);
- claim 5: the additional feature of a library of application objects is also disclosed in D1 (page 3, second paragraph in section 2: "The following is a list of all the beans currently implemented in Symphony"; and page 4, right column, last paragraph, lines 1-3: "Figure 1 shows how some of the above-mentioned beans can be composed to form a meta-program.");
- claim 6: visualizing a hierarchy as a tree is one of the well-known standard representations of a hierarchy.